



Table 1
Peak Flows from Site, cfs

Stady Lo	Study Location	2-Year Storm (3.10")	10-Year Storm (4.50")	25-Year Storm (5.40")	50-Year Storm (6.00")	100-Year Storm (6.40")
	Western Wetland	60.0	1.68	4.62	7.04	8.80
Existing Conditions	Northern Wetland	90.0	1.15	3.18	4.84	6.05
Existing Conditions	Vernal Pool	0.04	0.83	2.29	3.48	4.35
	Eastern Wetland	0.03	0.46	1.26	1.92	2.40
	Western Wetland	0.49	1.93	3.11	3.97	4.57
0,10010	Northern Wetland	0.46	96.0	1.37	1.88	2.67
Lost Closure	Vernal Pool	0.03	0.13	0.21	0.27	0.31
	Eastern Wetland	0.00	0.22	0.92	1.39	1.78

Table 2 Peak Volumes to Vernal Pool, acft.	2-Year Storm (3.10")	10-Year Storm (4.50")	25-Year Storm (5.40")	50-Year Storm (6.00")	100-Year Storm (6.40")
Existing Conditions	0.020	0.113	0.203	0.274	0.325
Post Closure	0.005	0.026	0.119	0.145	0.186

 Table 3

 Detention Pond Routing Characteristics

		10-Year	25-Year	50-Year	100-Year
	2-Year Storm (3.10")	Storm (4.50")	Storm (5.40")	Storm (6.00")	Storm (6.40")
etention Pond 1 (W	Detention Pond 1 (Western Wetland & Vernal Pool)	rnal Pool)			
Peak Inflow, cfs	14.82	22.58	27.52	30.80	32.98
Peak Outflow, cfs	0.11	0.15	0.26	0.70	1.17
Attenuation	%66	%66	%66	%86	%96
Peak Elevation,ft	48.39	50.11	51.07	51.28	51.41
Freeboard, ft	10.61	8.89	7.93	7.72	7.59
etention Pond 2 (N	Detention Pond 2 (Northern Wetland & Eastern Wetland)	ıstern Wetla	(pue		
Peak Inflow, cfs	20.83	31.68	38.58	43.16	46.21
Peak Outflow, cfs	0.40	0.71	1.92	3.11	4.21
Attenuation	%86	%86	%56	%86	91%
Peak Elevation,ft	50.98	52.43	52.88	53.11	53.29
Freeboard, ft	6.02	4.57	4.12	3.89	3.71

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### **Subcatchment 1S:**

Runoff = 14.82 cfs @ 12.24 hrs, Volume= 1.559 af, Depth= 2.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 2-Year Storm Event Rainfall=3.10"

_	Α	rea (sf)	CN [	Description		
	3	33,035	94 L	₋andfill Cov	er	
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	4.1	50	0.1200	0.2		Sheet Flow, Sheet Flow
						Grass: Dense n= 0.240 P2= 3.10"
	0.2	75	0.1200	5.6		Shallow Concentrated Flow, Flow on Slope
	14.0					Unpaved Kv= 16.1 fps  Direct Entry, Swale Concentrated Flow2fps
_	14.0					Direct Entry, Swale Concentrated Flow21ps
	18 3	125	Total			

## **Subcatchment 2S:**

Runoff = 20.83 cfs @ 12.08 hrs, Volume= 1.521 af, Depth= 2.45"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 2-Year Storm Event Rainfall=3.10"

_	Α	rea (sf)	CN	Description		
	3	24,842	94	Landfill Cov	er/er	
	Tc (min)	Length (feet)	Slope (ft/ft)	,	Capacity (cfs)	Description
	3.3	50	0.2100	0.3		Sheet Flow, Sheet Flow n= 0.240 P2= 3.10"
	0.6	250	0.2100	7.4		Shallow Concentrated Flow, Flow on Slope Unpaved Kv= 16.1 fps
_	1.7					Direct Entry, Concentrated Flow2 fps
	5.6	300	Total			

## **Subcatchment 4S: Direct Slope Runoff**

Runoff = 0.42 cfs @ 12.21 hrs, Volume= 0.065 af, Depth= 0.37"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 2-Year Storm Event Rainfall=3.10"

Area (sf)	CN	Description
91,175	60	

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Т	С	Length	Slope	Velocity	Capacity	Description
(mir	า)	(feet)	(ft/ft)	(ft/sec)	(cfs)	•

10.0 Direct Entry,

## **Subcatchment 5S: Direct Slope Runoff**

Runoff = 0.13 cfs @ 12.21 hrs, Volume= 0.020 af, Depth= 0.37"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 2-Year Storm Event Rainfall=3.10"

A	ea (sf)	CN	Description		
	28,200	60			
Tc	Length	Slope	e Velocity	Capacity	Description
(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)	
10.0	•	•			Direct Entry,

## **Subcatchment 6S: Direct Slope Runoff**

Runoff = 0.03 cfs @ 12.21 hrs, Volume= 0.005 af, Depth= 0.37"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 2-Year Storm Event Rainfall=3.10"

	Area (sf)	CN	Description		
	6,395	60			
	,				
T	Length	Slope	e Velocity	Capacity	Description
(min		(ft/ft		(cfs)	•
10.0	)	•		•	Direct Entry,

# Pond 1P: Basin 1

Inflow Area =	7.645 ac, Inflow Depth = 2.45"	for 2-Year Storm Event event
Inflow =	14.82 cfs @ 12.24 hrs, Volume=	1.559 af
Outflow =	0.11 cfs @ 24.25 hrs, Volume=	0.509 af, Atten= 99%, Lag= 720.3 min
Primary =	0.11 cfs @ 24.25 hrs, Volume=	0.509 af
Secondary =	0.00 cfs @ 1.00 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 48.39' @ 24.25 hrs Surf.Area= 20,389 sf Storage= 62,944 cf Plug-Flow detention time= 1,796.7 min calculated for 0.509 af (33% of inflow) Center-of-Mass det. time= 1,654.8 min (2,454.4 - 799.6)

#	Invert	Avail.Storage	Storage Description
1	45.00'	349,840 cf	Custom Stage Data (Pyramidal)Listed below

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Elevation	Surf.Area		Cum.Store	Wet.Area	
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)	(sq-ft)	
45.00	16,386	0	0	16,386	
46.00	17,709	17,043	17,043	17,808	
48.00	19,930	37,617	54,660	20,285	
50.00	22,268	42,176	96,837	22,896	
52.00	24,725	46,972	143,808	25,642	
54.00	27,303	52,007	195,815	28,525	
56.00	29,994	57,276	253,091	31,537	
58.00	32,986	62,956	316,047	34,848	
59.00	34,605	33,792	349,840	36,627	
# Routing	Invert	Outlet Devices			
1 Device 4	52.50'	36.0" Horiz. Orific	e/Grate Limited to	o weir flow C= 0.60	0
2 Device 4	51.00'	1.0' long Broad-Ci	rested Rectangul	lar Weir	
		Head (feet) 1.00 1	10.00		
		Coef. (English) 3.3	30 3.30		
3 Device 4	45.00'	1.5" Vert. Orifice/0	Grate C= 0.600		
4 Primary	42.00'	24.0" x 100.0' lon	<b>g Culvert</b> CMP, p	projecting, no headw	all, Ke= 0.900
		Outlet Invert= 41.7	5' S= 0.0025 '/'	n= 0.013 Cc= 0.900	)
5 Secondar	y 49.80'	1.0" Vert. Orifice/0			
6 Secondar	y 51.20'	6.0" Vert. Orifice/0	<b>Grate</b> C= 0.600		

Primary OutFlow Max=0.11 cfs @ 24.25 hrs HW=48.39' (Free Discharge)

**4=Culvert** (Passes 0.11 cfs of 27.73 cfs potential flow)

1=Orifice/Grate (Controls 0.00 cfs)

-2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

-3=Orifice/Grate (Orifice Controls 0.11 cfs @ 8.8 fps)

Secondary OutFlow Max=0.00 cfs @ 1.00 hrs HW=45.00' (Free Discharge)

5=Orifice/Grate (Controls 0.00 cfs)

-6=Orifice/Grate (Controls 0.00 cfs)

## Pond 2P: Basin 2

Inflow Area =	7.457 ac, Inflow Depth = 2.45"	for 2-Year Storm Event event
Inflow =	20.83 cfs @ 12.08 hrs, Volume=	1.521 af
Outflow =	0.40 cfs @ 17.70 hrs, Volume=	1.409 af, Atten= 98%, Lag= 337.5 min
Primary =	0.40 cfs @ 17.70 hrs, Volume=	1.409 af
Secondary =	0.00 cfs @ 17.70 hrs, Volume=	0.001 af

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

Starting Elev= 48.00' Surf.Area= 15,657 sf Storage= 43,393 cf

Peak Elev= 50.98' @ 17.70 hrs Surf.Area= 18,553 sf Storage= 93,899 cf (50,506 cf above start)

Plug-Flow detention time= 2,762.3 min calculated for 0.413 af (27% of inflow)

Center-of-Mass det. time= 1,351.2 min (2,139.0 - 787.8)

#	Invert	Avail.Storage	Storage Description
1	45.00'	175,675 cf	Custom Stage Data (Prismatic)Listed below

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	ation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
	15.00	12,977	0	0	
4	17.00	14,759	27,736	27,736	
2	19.00	16,555	31,314	59,050	
5	51.00	18,569	35,124	94,174	
5	53.00	20,363		133,106	
5	55.00	22,206	42,569	175,675	
#	Routing	Invert	Outlet Devices		
1	Device 3	48.00'	3.0" Vert. Orifice/	Crata C= 0.600	
2	Device 3	52.60'	1.0' long Broad-C		ılar Woir
2	Device 3	32.00	Head (feet) 1.00		iiai vveii
			Coef. (English) 3.		
3	Primary	45.00'	`		projecting, no headwall, Ke= 0.900
Ū		.0.00			n= 0.012 Cc= 0.900
4	Device 3	54.00'			to weir flow C= 0.600
5	Secondary		2.0" Vert. Orifice/		
6	Secondary		6.0" Vert. Orifice/		
7	Secondary		6.0" Vert. Orifice/		
8	Secondary		4.0" Vert. Orifice/	<b>Grate</b> C= 0.600	
	•				

Primary OutFlow Max=0.40 cfs @ 17.70 hrs HW=50.98' (Free Discharge)

**3=Culvert** (Passes 0.40 cfs of 26.66 cfs potential flow)

1=Orifice/Grate (Orifice Controls 0.40 cfs @ 8.1 fps)

-2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

-4=Orifice/Grate (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 17.70 hrs HW=50.98' (Free Discharge)

-5=Orifice/Grate (Orifice Controls 0.00 cfs @ 0.6 fps)

-6=Orifice/Grate (Controls 0.00 cfs)

-7=Orifice/Grate (Controls 0.00 cfs)

-8=Orifice/Grate (Controls 0.00 cfs)

#### Pond 4P: Western Wetland

Inflow Area = 9.739 ac, Inflow Depth = 0.71" for 2-Year Storm Event event

Inflow = 0.49 cfs @ 12.23 hrs, Volume= 0.574 af

Primary = 0.49 cfs @ 12.23 hrs, Volume= 0.574 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

## **Pond 5P: Northern Wetland**

Inflow Area = 8.105 ac, Inflow Depth = 2.12" for 2-Year Storm Event event

Inflow = 0.46 cfs @ 12.37 hrs, Volume= 1.429 af

Primary = 0.46 cfs @ 12.37 hrs, Volume= 1.429 af, Atten= 0%, Lag= 0.0 min

Type III 24-hr 2-Year Storm Event Rainfall=3.10"

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## Pond 6P: Vernal Pool

Inflow Area = 0.147 ac, Inflow Depth = 0.37" for 2-Year Storm Event event

Inflow = 0.03 cfs @ 12.21 hrs, Volume= 0.005 af

Primary = 0.03 cfs @ 12.21 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

## Pond 7P: Eastern Wetland

Inflow = 0.00 cfs @ 17.70 hrs, Volume= 0.001 af

Primary = 0.00 cfs @ 17.70 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

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### **Subcatchment 1S:**

Runoff = 22.58 cfs @ 12.24 hrs, Volume= 2.431 af, Depth= 3.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 10-Year Storm Event Rainfall=4.50"

_	Α	rea (sf)	CN I	Description		
	3	33,035	94 l	_andfill Cov	er er	
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
_	4.1	50	0.1200	0.2		Sheet Flow, Sheet Flow
						Grass: Dense n= 0.240 P2= 3.10"
	0.2	75	0.1200	5.6		Shallow Concentrated Flow, Flow on Slope
						Unpaved Kv= 16.1 fps
_	14.0					Direct Entry, Swale Concentrated Flow2fps
	18 3	125	Total			

## **Subcatchment 2S:**

Runoff = 31.68 cfs @ 12.08 hrs, Volume= 2.371 af, Depth= 3.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 10-Year Storm Event Rainfall=4.50"

	Α	rea (sf)	CN	Description		
	3	24,842	94	Landfill Cov	/er	
	Tc (min)	Length (feet)	Slope (ft/ft)	,	Capacity (cfs)	Description
	3.3	50	0.2100	0.3		Sheet Flow, Sheet Flow n= 0.240 P2= 3.10"
	0.6	250	0.2100	7.4		Shallow Concentrated Flow, Flow on Slope Unpaved Kv= 16.1 fps
_	1.7					Direct Entry, Concentrated Flow2 fps
	5.6	300	Total		•	

## **Subcatchment 4S: Direct Slope Runoff**

Runoff = 1.85 cfs @ 12.16 hrs, Volume= 0.178 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 10-Year Storm Event Rainfall=4.50"

Area (sf)	CN	Description
91,175	60	

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Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	

10.0 Direct Entry,

# **Subcatchment 5S: Direct Slope Runoff**

Runoff = 0.57 cfs @ 12.16 hrs, Volume= 0.055 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 10-Year Storm Event Rainfall=4.50"

A	ea (sf)	CN	Description		
	28,200	60			
Tc	Length	Slope	e Velocity	Capacity	Description
(min)	(feet)	(ft/ft	) (ft/sec)	(cfs)	
10.0	•	•			Direct Entry,

## **Subcatchment 6S: Direct Slope Runoff**

Runoff = 0.13 cfs @ 12.16 hrs, Volume= 0.012 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 10-Year Storm Event Rainfall=4.50"

A	rea (sf)	CN	Description		
	6,395	60			
Tc (min)	Length (feet)	Slope (ft/ft		Capacity (cfs)	Description
10.0		•			Direct Entry,

### Pond 1P: Basin 1

Inflow Area =	7.645 ac, Inflow Depth = 3.82"	for 10-Year Storm Event event
Inflow =	22.58 cfs @ 12.24 hrs, Volume=	2.431 af
Outflow =	0.15 cfs @ 24.26 hrs, Volume=	0.653 af, Atten= 99%, Lag= 721.2 min
Primary =	0.13 cfs @ 24.26 hrs, Volume=	0.639 af
Secondary =	0.01 cfs @ 24.26 hrs, Volume=	0.014 af

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 50.11' @ 24.26 hrs Surf.Area= 22,399 sf Storage= 99,335 cf Plug-Flow detention time= 1,815.1 min calculated for 0.653 af (27% of inflow) Center-of-Mass det. time= 1,644.7 min (2,432.7 - 787.9)

#	Invert	Avail.Storage	Storage Description
1	45.00'	349,840 cf	Custom Stage Data (Pyramidal)Listed below

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Elev	ation	Surf.Area	Inc.Store	Cum.Store	Wet.Area	
(	(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)	(sq-ft)	
4	15.00	16,386	0	0	16,386	
4	16.00	17,709	17,043	17,043	17,808	
4	18.00	19,930	37,617	54,660	20,285	
5	50.00	22,268	42,176	96,837	22,896	
5	52.00	24,725	46,972	143,808	25,642	
5	54.00	27,303	52,007	195,815	28,525	
5	6.00	29,994	57,276	253,091	31,537	
5	58.00	32,986	62,956	316,047	34,848	
5	59.00	34,605	33,792	349,840	36,627	
#_	Routing	Invert	Outlet Devices			
1	Device 4	52.50'	36.0" Horiz. Orifice	/Grate Limited to	weir flow C= 0.600	
2	Device 4	51.00'	1.0' long Broad-Cre		r Weir	
			Head (feet) 1.00 10	0.00		
			Coef. (English) 3.30			
3	Device 4	45.00'	1.5" Vert. Orifice/G			
4	Primary	42.00'	24.0" x 100.0' long		,	l, Ke= 0.900
			Outlet Invert= 41.75'		= 0.013 Cc= 0.900	
5	Secondary	49.80'	1.0" Vert. Orifice/G			
6	Secondary	51.20'	6.0" Vert. Orifice/G	rate C= 0.600		

Primary OutFlow Max=0.13 cfs @ 24.26 hrs HW=50.11' (Free Discharge)

**4=Culvert** (Passes 0.13 cfs of 31.84 cfs potential flow)

1=Orifice/Grate (Controls 0.00 cfs)

-2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

-3=Orifice/Grate (Orifice Controls 0.13 cfs @ 10.8 fps)

Secondary OutFlow Max=0.01 cfs @ 24.26 hrs HW=50.11' (Free Discharge)

-5=Orifice/Grate (Orifice Controls 0.01 cfs @ 2.5 fps)

**-6=Orifice/Grate** (Controls 0.00 cfs)

## Pond 2P: Basin 2

Inflow Area =	7.457 ac, Inflow Depth = 3.82"	for 10-Year Storm Event event
Inflow =	31.68 cfs @ 12.08 hrs, Volume=	2.371 af
Outflow =	0.71 cfs @ 17.00 hrs, Volume=	2.082 af, Atten= 98%, Lag= 295.4 min
Primary =	0.49 cfs @ 17.00 hrs, Volume=	1.865 af
Secondary =	0.22 cfs @ 17.00 hrs, Volume=	0.218 af

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Starting Elev= 48.00' Surf.Area= 15,657 sf Storage= 43,393 cf

Peak Elev= 52.43' @ 17.00 hrs Surf.Area= 19,852 sf Storage= 122,019 cf (78,626 cf above start)

Plug-Flow detention time= 2,266.0 min calculated for 1.086 af (46% of inflow)

Center-of-Mass det. time= 1,335.7 min (2,111.9 - 776.1)

#	Invert	Avail.Storage	Storage Description
1	45.00'	175,675 cf	Custom Stage Data (Prismatic)Listed below

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	ation feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
	5.00	12,977	0	0	
	7.00	14,759	27,736	27,736	
4	9.00	16,555	31,314	59,050	
5	51.00	18,569	35,124	94,174	
5	3.00	20,363	38,932	133,106	
5	5.00	22,206	42,569	175,675	
_		,_	,	,	
#	Routing	Invert	Outlet Devices		
1	Device 3	48.00'	3.0" Vert. Orifice/	<b>Grate</b> C= 0.600	
2	Device 3	52.60'	1.0' long Broad-C	rested Rectangu	ılar Weir
			Head (feet) 1.00		
			Coef. (English) 3.3		
3	Primary	45.00'	` ` ,		projecting, no headwall, Ke= 0.900
3	Filliary	43.00			n= 0.012 Cc= 0.900
	Б	<b>5</b> 4.001			
4	Device 3	54.00'			to weir flow C= 0.600
5	Secondary	50.95'	2.0" Vert. Orifice/		
6	Secondary	52.25'	6.0" Vert. Orifice/	<b>Grate</b> C= 0.600	
7	Secondary	52.60'	6.0" Vert. Orifice/	<b>Grate</b> C= 0.600	
8	Secondary	53.00'	4.0" Vert. Orifice/	<b>Grate</b> C= 0.600	
	,				

Primary OutFlow Max=0.49 cfs @ 17.00 hrs HW=52.43' (Free Discharge)

3=Culvert (Passes 0.49 cfs of 30.28 cfs potential flow)

-1=Orifice/Grate (Orifice Controls 0.49 cfs @ 10.0 fps)

-2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

**-4=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.22 cfs @ 17.00 hrs HW=52.43' (Free Discharge)

**5=Orifice/Grate** (Orifice Controls 0.12 cfs @ 5.7 fps)

**─6=Orifice/Grate** (Orifice Controls 0.09 cfs @ 1.4 fps)

-7=Orifice/Grate (Controls 0.00 cfs)

-8=Orifice/Grate (Controls 0.00 cfs)

#### Pond 4P: Western Wetland

Inflow Area = 9.739 ac, Inflow Depth = 1.01" for 10-Year Storm Event event

Inflow = 1.93 cfs @ 12.16 hrs, Volume= 0.817 af

Primary = 1.93 cfs @ 12.16 hrs, Volume= 0.817 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

## **Pond 5P: Northern Wetland**

Inflow Area = 8.105 ac, Inflow Depth = 2.84" for 10-Year Storm Event event

Inflow = 0.96 cfs @ 12.17 hrs, Volume= 1.920 af

Primary = 0.96 cfs @ 12.17 hrs, Volume= 1.920 af, Atten= 0%, Lag= 0.0 min

Type III 24-hr 10-Year Storm Event Rainfall=4.50"

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## Pond 6P: Vernal Pool

Inflow Area = 0.147 ac, Inflow Depth = 2.17" for 10-Year Storm Event event

Inflow = 0.13 cfs @ 12.16 hrs, Volume= 0.026 af

Primary = 0.13 cfs @ 12.16 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

## Pond 7P: Eastern Wetland

Inflow = 0.22 cfs @ 17.00 hrs, Volume= 0.218 af

Primary = 0.22 cfs @ 17.00 hrs, Volume= 0.218 af, Atten= 0%, Lag= 0.0 min

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### **Subcatchment 1S:**

Runoff = 27.52 cfs @ 12.24 hrs, Volume= 2.996 af, Depth= 4.70"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Storm Event Rainfall=5.40"

_	Α	rea (sf)	CN	Description		
	3	33,035	94	Landfill Cov	er er	
	Tc (min)	Length (feet)	Slope (ft/ft)	,	Capacity (cfs)	Description
_	4.1	50	0.1200	0.2		Sheet Flow, Sheet Flow
						Grass: Dense n= 0.240 P2= 3.10"
	0.2	75	0.1200	5.6		Shallow Concentrated Flow, Flow on Slope
						Unpaved Kv= 16.1 fps
_	14.0					Direct Entry, Swale Concentrated Flow2fps
	18.3	125	Total			

## **Subcatchment 2S:**

Runoff = 38.58 cfs @ 12.08 hrs, Volume= 2.923 af, Depth= 4.70"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Storm Event Rainfall=5.40"

 Α	rea (sf)	CN E	<b>Description</b>		
3	24,842	94 L	andfill Cov	er	
 Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	50	0.2100	0.3		Sheet Flow, Sheet Flow
0.0	050	0.0400	7.4		n= 0.240 P2= 3.10"
0.6	250	0.2100	7.4		Shallow Concentrated Flow, Flow on Slope Unpaved Kv= 16.1 fps
1.7					Direct Entry, Concentrated Flow2 fps
5.6	300	Total			•

## **Subcatchment 4S: Direct Slope Runoff**

Runoff = 3.02 cfs @ 12.15 hrs, Volume= 0.269 af, Depth= 1.54"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Storm Event Rainfall=5.40"

Area (sf)	CN	Description
91,175	60	

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Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	

10.0 Direct Entry,

# **Subcatchment 5S: Direct Slope Runoff**

Runoff = 0.93 cfs @ 12.15 hrs, Volume= 0.083 af, Depth= 1.54"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Storm Event Rainfall=5.40"

Area (sf)	CN	Description		
28,200	60			
Tc Length	Slop	e Velocity	Capacity	Description
(min) (feet)	(ft/f	t) (ft/sec)	(cfs)	
10.0	•			Direct Entry,

## **Subcatchment 6S: Direct Slope Runoff**

Runoff = 0.21 cfs @ 12.15 hrs, Volume= 0.019 af, Depth= 1.54"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 25-Year Storm Event Rainfall=5.40"

	Area (sf)	CN	Description		
	6,395	60			
	,				
T	Length	Slope	e Velocity	Capacity	Description
(min		(ft/ft		(cfs)	•
10.0	)	•		•	Direct Entry,

## Pond 1P: Basin 1

Inflow Area =	7.645 ac, Inflow Depth = 4.70"	for 25-Year Storm Event event
Inflow =	27.52 cfs @ 12.24 hrs, Volume=	2.996 af
Outflow =	0.26 cfs @ 24.19 hrs, Volume=	0.819 af, Atten= 99%, Lag= 717.2 min
Primary =	0.23 cfs @ 24.19 hrs, Volume=	0.719 af
Secondary =	0.03 cfs @ 24.19 hrs, Volume=	0.100 af

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 51.07' @ 24.19 hrs Surf.Area= 23,588 sf Storage= 122,072 cf Plug-Flow detention time= 1,800.0 min calculated for 0.819 af (27% of inflow) Center-of-Mass det. time= 1,624.8 min (2,407.6 - 782.8)

#	Invert	Avail.Storage	Storage Description
1	45.00'	349,840 cf	Custom Stage Data (Pyramidal)Listed below

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Elevation	Surf.Area	Inc.Store	Cum.Store	Wet.Area	
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)	(sq-ft)	
45.00	16,386	0	0	16,386	
46.00	17,709	17,043	17,043	17,808	
48.00	19,930	37,617	54,660	20,285	
50.00	22,268	42,176	96,837	22,896	
52.00	24,725	46,972	143,808	25,642	
54.00	27,303	52,007	195,815	28,525	
56.00	29,994	57,276	253,091	31,537	
58.00	32,986	62,956	316,047	34,848	
59.00	34,605	33,792	349,840	36,627	
# Davidina	14	Outlet Design			
# Routing	Invert	Outlet Devices			
1 Device 4	52.50'	36.0" Horiz. Orifice			)
2 Device 4	51.00'	1.0' long Broad-Cro		ır Weir	
		Head (feet) 1.00 1			
		Coef. (English) 3.30			
3 Device 4	45.00'	1.5" Vert. Orifice/G			
4 Primary	42.00'	24.0" x 100.0' long			
	10.001	Outlet Invert= 41.75		= 0.013 Cc= 0.900	
5 Secondary		1.0" Vert. Orifice/G			
6 Secondary	/ 51.20'	6.0" Vert. Orifice/G	rate C= 0.600		

**Primary OutFlow** Max=0.21 cfs @ 24.19 hrs HW=51.07' (Free Discharge)

**4=Culvert** (Passes 0.21 cfs of 33.93 cfs potential flow)

1=Orifice/Grate (Controls 0.00 cfs)

-2=Broad-Crested Rectangular Weir (Weir Controls 0.07 cfs @ 0.9 fps)

-3=Orifice/Grate (Orifice Controls 0.14 cfs @ 11.8 fps)

Secondary OutFlow Max=0.03 cfs @ 24.19 hrs HW=51.07' (Free Discharge)

-5=Orifice/Grate (Orifice Controls 0.03 cfs @ 5.3 fps)

**-6=Orifice/Grate** (Controls 0.00 cfs)

## Pond 2P: Basin 2

Inflow Area =	7.457 ac, Inflow Depth = 4.70"	for 25-Year Storm Event event
Inflow =	38.58 cfs @ 12.08 hrs, Volume=	2.923 af
Outflow =	1.92 cfs @ 14.16 hrs, Volume=	2.611 af, Atten= 95%, Lag= 124.8 min
Primary =	1.00 cfs @ 14.16 hrs, Volume=	2.055 af
Secondary =	0.92 cfs @ 14.16 hrs, Volume=	0.556 af

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Starting Elev= 48.00' Surf.Area= 15,657 sf Storage= 43,393 cf

Peak Elev= 52.88' @ 14.16 hrs Surf.Area= 20,252 sf Storage= 130,707 cf (87,314 cf above start)

Plug-Flow detention time= 1,837.4 min calculated for 1.615 af (55% of inflow)

Center-of-Mass det. time= 1,130.7 min (1,901.7 - 771.0)

#	Invert	Avail.Storage	Storage Description
1	45.00'	175,675 cf	Custom Stage Data (Prismatic)Listed below

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Elevation		Surf.Area	Inc.Store Cum.Store						
(feet)		(sq-ft)	(cubic-feet) (cubic-feet)						
45.00		12,977	0 0						
4	17.00	14,759	27,736 27,736						
2	19.00	16,555							
	51.00	18,569							
53.00		20,363							
5	55.00	22,206	42,569 175,675						
#	Routing	Invert	Outlet Devices						
1	Device 3	48.00'	3.0" Vert. Orifice/Grate C= 0.600						
2	Device 3	52.60'	1.0' long Broad-Crested Rectangular Weir						
			Head (feet) 1.00 10.00						
			Coef. (English) 3.30 3.30						
3	Primary	45.00'	24.0" x 100.0' long Culvert CMP, projecting, no hea	adwall, Ke= 0.900					
	-		Outlet Invert= 44.00' S= 0.0100 '/' n= 0.012 Cc= 0	.900					
4	Device 3	54.00'	<b>36.0" Horiz. Orifice/Grate</b> Limited to weir flow C= 0	).600					
5	Secondary		2.0" Vert. Orifice/Grate C= 0.600						
6	Secondary	52.25'							
7	Secondary								
8	Secondary	53.00'	4.0" Vert. Orifice/Grate C= 0.600						
	8 Secondary 53.00' 4.0" Vert. Orifice/Grate C= 0.600  Primary OutFlow Max=1.00 cfs @ 14.16 hrs HW=52.88' (Free Discharge)  3=Culvert (Passes 1.00 cfs of 31.32 cfs potential flow)  1=Orifice/Grate (Orifice Controls 0.52 cfs @ 10.5 fps)  2=Broad-Crested Rectangular Weir (Weir Controls 0.48 cfs @ 1.7 fps)  4=Orifice/Grate (Controls 0.00 cfs)								

**Secondary OutFlow** Max=0.92 cfs @ 14.16 hrs HW=52.88' (Free Discharge)

5=Orifice/Grate (Orifice Controls 0.14 cfs @ 6.5 fps)

**-6=Orifice/Grate** (Orifice Controls 0.58 cfs @ 3.0 fps)

-7=Orifice/Grate (Orifice Controls 0.20 cfs @ 1.8 fps)

-8=Orifice/Grate (Controls 0.00 cfs)

#### Pond 4P: Western Wetland

Inflow Area = 9.739 ac, Inflow Depth = 1.22" for 25-Year Storm Event event

Inflow = 3.11 cfs @ 12.15 hrs, Volume= 0.988 af

Primary = 3.11 cfs @ 12.15 hrs, Volume= 0.988 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

## **Pond 5P: Northern Wetland**

Inflow Area = 8.105 ac, Inflow Depth = 3.17" for 25-Year Storm Event event

Inflow = 1.37 cfs @ 12.16 hrs, Volume= 2.138 af

Primary = 1.37 cfs @ 12.16 hrs, Volume= 2.138 af, Atten= 0%, Lag= 0.0 min

Type III 24-hr 25-Year Storm Event Rainfall=5.40"

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## Pond 6P: Vernal Pool

Inflow Area = 0.147 ac, Inflow Depth = 9.72" for 25-Year Storm Event event

Inflow = 0.21 cfs @ 12.15 hrs, Volume= 0.119 af

Primary = 0.21 cfs @ 12.15 hrs, Volume= 0.119 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

## Pond 7P: Eastern Wetland

Inflow = 0.92 cfs @ 14.16 hrs, Volume= 0.556 af

Primary = 0.92 cfs @ 14.16 hrs, Volume= 0.556 af, Atten= 0%, Lag= 0.0 min

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### **Subcatchment 1S:**

Runoff = 30.80 cfs @ 12.24 hrs, Volume= 3.375 af, Depth= 5.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 50-Year Storm Event Rainfall=6.00"

_	Α	rea (sf)	CN I	Description		
	3	33,035	94 l	_andfill Cov	er er	
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
_	4.1	50	0.1200	0.2		Sheet Flow, Sheet Flow
						Grass: Dense n= 0.240 P2= 3.10"
	0.2	75	0.1200	5.6		Shallow Concentrated Flow, Flow on Slope
						Unpaved Kv= 16.1 fps
_	14.0					Direct Entry, Swale Concentrated Flow2fps
	18 3	125	Total			

## Subcatchment 2S:

Runoff = 43.16 cfs @ 12.08 hrs, Volume= 3.292 af, Depth= 5.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 50-Year Storm Event Rainfall=6.00"

_	Α	rea (sf)	CN	Description		
	3	24,842	94	Landfill Cov	er/er	
	Tc (min)	Length (feet)	Slope (ft/ft)	,	Capacity (cfs)	Description
	3.3	50	0.2100	0.3		Sheet Flow, Sheet Flow n= 0.240 P2= 3.10"
	0.6	250	0.2100	7.4		Shallow Concentrated Flow, Flow on Slope Unpaved Kv= 16.1 fps
_	1.7					Direct Entry, Concentrated Flow2 fps
	5.6	300	Total			

## **Subcatchment 4S: Direct Slope Runoff**

Runoff = 3.87 cfs @ 12.15 hrs, Volume= 0.335 af, Depth= 1.92"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 50-Year Storm Event Rainfall=6.00"

Area (sf)	CN	Description
91,175	60	

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Т	С	Length	Slope	Velocity	Capacity	Description
(mir	า)	(feet)	(ft/ft)	(ft/sec)	(cfs)	•

10.0 Direct Entry,

## **Subcatchment 5S: Direct Slope Runoff**

Runoff = 1.20 cfs @ 12.15 hrs, Volume= 0.104 af, Depth= 1.92"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 50-Year Storm Event Rainfall=6.00"

A	rea (sf)	CN	Description		
	28,200	60			
Tc (min)	Length (feet)	Slope (ft/ft	•	Capacity (cfs)	Description
10.0					Direct Entry,

# **Subcatchment 6S: Direct Slope Runoff**

Runoff = 0.27 cfs @ 12.15 hrs, Volume= 0.024 af, Depth= 1.92"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 50-Year Storm Event Rainfall=6.00"

<u> Area (sf)</u>	CN	Description		
6,395	60			
,				
: Lenath	Sloi	oe Velocity	Capacity	Description
			(cfs)	'
)	,	, ,	, ,	Direct Entry,
	c Length	6,395 60 c Length Slop (feet) (ft/	6,395 60 c Length Slope Velocity (ft/ft) (ft/sec)	6,395 60  c Length Slope Velocity Capacity (feet) (ft/ft) (ft/sec) (cfs)

# Pond 1P: Basin 1

Inflow Area =	7.645 ac, Inflow Depth = 5.30"	for 50-Year Storm Event event
Inflow =	30.80 cfs @ 12.24 hrs, Volume=	3.375 af
Outflow =	0.70 cfs @ 18.69 hrs, Volume=	1.170 af, Atten= 98%, Lag= 387.0 min
Primary =	0.65 cfs @ 18.69 hrs, Volume=	1.049 af
Secondary =	0.06 cfs @ 18.69 hrs, Volume=	0.121 af

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 51.28' @ 18.69 hrs Surf.Area= 23,844 sf Storage= 126,973 cf Plug-Flow detention time= 1,437.0 min calculated for 1.170 af (35% of inflow) Center-of-Mass det. time= 1,283.7 min (2,063.6 - 779.9)

#	Invert	Avail.Storage	Storage Description
1	45.00'	349,840 cf	Custom Stage Data (Pyramidal)Listed below

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Elevation Surf.Area (feet) (sq-ft)			Cum.Store (cubic-feet)	Wet.Area (sq-ft)				
45.00	16,386		0	16,386				
46.00	17,709		17,043	17,808				
48.00	19,930	,	54,660	20,285				
50.00	22,268	•	96,837	22,896				
52.00	24,725	•	143,808	25,642				
54.00	27,303	•	195,815	28,525				
56.00	29,994	•	253,091	31,537				
58.00	32,986	•	316,047	34,848				
59.00	34,605	•	349,840	36,627				
# Routing	Invert	Outlet Devices						
1 Device 4	52.50'	36.0" Horiz. Orifice	e/Grate Limited to	o weir flow C= 0.60	00			
2 Device 4	51.00'	1.0' long Broad-Cr	ested Rectangul	ar Weir				
		Head (feet) 1.00 1						
		`	Coef. (English) 3.30 3.30					
3 Device 4	45.00'	1.5" Vert. Orifice/G						
4 Primary	42.00'	24.0" x 100.0' long	• 1	, 0,	•			
		Outlet Invert= 41.75		n= 0.013     Cc= 0.90	00			
5 Secondar	•	1.0" Vert. Orifice/C						
6 Secondai	y 51.20'	6.0" Vert. Orifice/G	<b>Frate</b> C= 0.600					

Primary OutFlow Max=0.64 cfs @ 18.69 hrs HW=51.28' (Free Discharge)

**-4=Culvert** (Passes 0.64 cfs of 34.37 cfs potential flow)

1=Orifice/Grate (Controls 0.00 cfs)

—2=Broad-Crested Rectangular Weir (Weir Controls 0.50 cfs @ 1.8 fps)

**-3=Orifice/Grate** (Orifice Controls 0.15 cfs @ 12.0 fps)

Secondary OutFlow Max=0.05 cfs @ 18.69 hrs HW=51.28' (Free Discharge)

-5=Orifice/Grate (Orifice Controls 0.03 cfs @ 5.8 fps)

**-6=Orifice/Grate** (Orifice Controls 0.02 cfs @ 1.0 fps)

### Pond 2P: Basin 2

Inflow Area =	7.457 ac, Inflow Depth = 5.30"	for 50-Year Storm Event event
Inflow =	43.16 cfs @ 12.08 hrs, Volume=	3.292 af
Outflow =	3.11 cfs @ 13.21 hrs, Volume=	2.974 af, Atten= 93%, Lag= 68.0 min
Primary =	1.72 cfs @ 13.21 hrs, Volume=	2.252 af
Secondary =	1.39 cfs @ 13.21 hrs, Volume=	0.721 af

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Starting Elev= 48.00' Surf.Area= 15,657 sf Storage= 43,393 cf

Peak Elev= 53.11' @ 13.21 hrs Surf.Area= 20,461 sf Storage= 135,366 cf (91,973 cf above start)

Plug-Flow detention time= 1,593.4 min calculated for 1.977 af (60% of inflow)

Center-of-Mass det. time= 1,012.9 min (1,781.0 - 768.1)

#	Invert	Avail.Storage	Storage Description
1	45.00'	175,675 cf	Custom Stage Data (Prismatic)Listed below

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Elev	ation	Surf.Area	Inc.Store	Cum.Store			
	(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)			
	45.00	12,977	0	0			
4	47.00	14,759	27,736	27,736			
4	49.00	16,555	31,314	59,050			
į	51.00	18,569	35,124	94,174			
	53.00	20,363	38,932	133,106			
į	55.00	22,206	42,569	175,675			
щ	Douting	lovort	Outlet Davisse				
	Routing		Outlet Devices				
1	Device 3	48.00'	3.0" Vert. Orifice/G				
2	Device 3	52.60'	1.0' long Broad-Cr		ilar Weir		
			Head (feet) 1.00 1				
2	Drimon	45.00	Coef. (English) 3.30		projecting ne headwall Ko- 0.000		
3	Primary	45.00'			projecting, no headwall, Ke= 0.900 n= 0.012 Cc= 0.900		
4	Device 3	54.00'			to weir flow C= 0.600		
5	Secondary		2.0" Vert. Orifice/G		to well flow C= 0.000		
6	Secondary		6.0" Vert. Orifice/G				
7	Secondary		6.0" Vert. Orifice/G				
8	Secondary	53.00'	4.0" Vert. Orifice/G				
Primary OutFlow Max=1.72 cfs @ 13.21 hrs HW=53.11' (Free Discharge)  3=Culvert (Passes 1.72 cfs of 31.83 cfs potential flow)  1=Orifice/Grate (Orifice Controls 0.53 cfs @ 10.7 fps)  2=Broad-Crested Rectangular Weir (Weir Controls 1.19 cfs @ 2.3 fps)  4=Orifice/Grate (Controls 0.00 cfs)							
5= -6=	Secondary OutFlow Max=1.39 cfs @ 13.21 hrs HW=53.11' (Free Discharge)  5=Orifice/Grate (Orifice Controls 0.15 cfs @ 6.9 fps)  6=Orifice/Grate (Orifice Controls 0.74 cfs @ 3.7 fps)  7=Orifice/Grate (Orifice Controls 0.48 cfs @ 2.4 fps)						

## Pond 4P: Western Wetland

Inflow Area	a =	9.739 ac, Inflow Depth = 1.71"	for 50-Year Storm Event event
Inflow	=	3.97 cfs @ 12.15 hrs, Volume=	: 1.384 af
Primary	=	3.97 cfs @ 12.15 hrs, Volume=	1.384 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

-8=Orifice/Grate (Orifice Controls 0.03 cfs @ 1.1 fps)

## **Pond 5P: Northern Wetland**

Inflow Are	a =	8.105 ac, Inflow Depth = 3.49"	for 50-Year Storm Event event
Inflow	=	1.88 cfs @ 13.06 hrs, Volume=	2.356 af
Primary	=	1.88 cfs @ 13.06 hrs. Volume=	2.356 af. Atten= 0%. Lag= 0.0 min

Type III 24-hr 50-Year Storm Event Rainfall=6.00"

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## Pond 6P: Vernal Pool

Inflow Area = 0.147 ac, Inflow Depth = 11.82" for 50-Year Storm Event event

Inflow = 0.27 cfs @ 12.15 hrs, Volume= 0.145 af

Primary = 0.27 cfs @ 12.15 hrs, Volume= 0.145 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

## Pond 7P: Eastern Wetland

Inflow = 1.39 cfs @ 13.21 hrs, Volume= 0.721 af

Primary = 1.39 cfs @ 13.21 hrs, Volume= 0.721 af, Atten= 0%, Lag= 0.0 min

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### **Subcatchment 1S:**

Runoff = 32.98 cfs @ 12.24 hrs, Volume= 3.627 af, Depth= 5.69"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 100-Year Storm Event Rainfall=6.40"

_	Α	rea (sf)	CN	Description		
	3	33,035	94	Landfill Cov	er er	
	Tc (min)	Length (feet)	Slope (ft/ft)	,	Capacity (cfs)	Description
_	4.1	50	0.1200	0.2		Sheet Flow, Sheet Flow
						Grass: Dense n= 0.240 P2= 3.10"
	0.2	75	0.1200	5.6		Shallow Concentrated Flow, Flow on Slope
						Unpaved Kv= 16.1 fps
_	14.0					Direct Entry, Swale Concentrated Flow2fps
	18.3	125	Total			

## **Subcatchment 2S:**

Runoff = 46.21 cfs @ 12.08 hrs, Volume= 3.538 af, Depth= 5.69"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 100-Year Storm Event Rainfall=6.40"

_	Α	rea (sf)	CN E	Description		
	3	24,842	94 L	andfill Cov	er	
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
Ī	3.3	50	0.2100	0.3		Sheet Flow, Sheet Flow
	0.0	050	0.0400	7.4		n= 0.240 P2= 3.10"
	0.6	250	0.2100	7.4		Shallow Concentrated Flow, Flow on Slope Unpaved Kv= 16.1 fps
	1.7					Direct Entry, Concentrated Flow2 fps
-	5.6	300	Total			•

## **Subcatchment 4S: Direct Slope Runoff**

Runoff = 4.47 cfs @ 12.15 hrs, Volume= 0.382 af, Depth= 2.19"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 100-Year Storm Event Rainfall=6.40"

Area (sf)	CN	Description
91,175	60	

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Tc	Length	Slope	Velocity	Capacity	Description
 (min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	-

10.0 Direct Entry,

# **Subcatchment 5S: Direct Slope Runoff**

Runoff = 1.38 cfs @ 12.15 hrs, Volume= 0.118 af, Depth= 2.19"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 100-Year Storm Event Rainfall=6.40"

Area (sf)	CN	Description		
28,200	60			
Tc Length	Slop	e Velocity	Capacity	Description
(min) (feet)	(ft/f	t) (ft/sec)	(cfs)	
10.0	•			Direct Entry,

## **Subcatchment 6S: Direct Slope Runoff**

Runoff = 0.31 cfs @ 12.15 hrs, Volume= 0.027 af, Depth= 2.19"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Type III 24-hr 100-Year Storm Event Rainfall=6.40"

Aı	rea (sf)	<u>CN</u>	Description		
	6,395	60			
	,				
Тс	Lenath	Slop	e Velocity	Capacity	Description
in)	(feet)			(cfs)	
10	` '		, , ,	` '	Direct Entry,
	Tc in)	Tc Length in) (feet)	6,395 60  Tc Length Slop (ft/fin) (feet) (ft/fi	6,395 60  Tc Length Slope Velocity in) (feet) (ft/ft) (ft/sec)	6,395 60  Tc Length Slope Velocity Capacity

# Pond 1P: Basin 1

Inflow Area =	7.645 ac, Inflow Depth = 5.69"	for 100-Year Storm Event event
Inflow =	32.98 cfs @ 12.24 hrs, Volume=	3.627 af
Outflow =	1.17 cfs @ 16.69 hrs, Volume=	1.420 af, Atten= 96%, Lag= 267.2 min
Primary =	1.01 cfs @ 16.69 hrs, Volume=	1.261 af
Secondary =	0.16 cfs @ 16.69 hrs, Volume=	0.159 af

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Peak Elev= 51.41' @ 16.69 hrs Surf.Area= 23,996 sf Storage= 129,875 cf Plug-Flow detention time= 1,248.4 min calculated for 1.420 af (39% of inflow) Center-of-Mass det. time= 1,106.0 min (1,884.3 - 778.2)

#	Invert	Avail.Storage	Storage Description
1	45.00'	349,840 cf	Custom Stage Data (Pyramidal)Listed below

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Elevation	Surf.Area		Cum.Store	Wet.Area		
(feet)	(sq-ft)	(cubic-feet)	(cubic-feet)	(sq-ft)		
45.00	16,386	0	0	16,386		
46.00	17,709	17,043	17,043	17,808		
48.00	19,930	37,617	54,660	20,285		
50.00	22,268	42,176	96,837	22,896		
52.00	24,725	46,972	143,808	25,642		
54.00	27,303	52,007	195,815	28,525		
56.00	29,994	57,276	253,091	31,537		
58.00	32,986	62,956	316,047	34,848		
59.00	34,605	33,792	349,840	36,627		
# Routing	Invert	Outlet Devices				
1 Device 4	52.50'	<b>36.0" Horiz. Orifice/Grate</b> Limited to weir flow C= 0.600				
2 Device 4	51.00'	1.0' long Broad-Crested Rectangular Weir				
		Head (feet) 1.00 10.00				
		Coef. (English) 3.30 3.30				
3 Device 4	45.00'	1.5" Vert. Orifice/Grate C= 0.600				
4 Primary	42.00'	24.0" x 100.0' long Culvert CMP, projecting, no headwall, Ke= 0.900				
	Outlet Invert= 41.75' S= 0.0025 '/' n= 0.013 Cc= 0.900				0	
5 Secondai	y 49.80'	1.0" Vert. Orifice/Grate C= 0.600				
6 Secondai	′y 51.20'	6.0" Vert. Orifice/Grate C= 0.600				

Primary OutFlow Max=1.00 cfs @ 16.69 hrs HW=51.41' (Free Discharge)

**4=Culvert** (Passes 1.00 cfs of 34.63 cfs potential flow)

1=Orifice/Grate (Controls 0.00 cfs)

-2=Broad-Crested Rectangular Weir (Weir Controls 0.86 cfs @ 2.1 fps)

-3=Orifice/Grate (Orifice Controls 0.15 cfs @ 12.1 fps)

Secondary OutFlow Max=0.15 cfs @ 16.69 hrs HW=51.41' (Free Discharge)

5=Orifice/Grate (Orifice Controls 0.03 cfs @ 6.0 fps)

-6=Orifice/Grate (Orifice Controls 0.12 cfs @ 1.5 fps)

### Pond 2P: Basin 2

Inflow Area =	7.457 ac, Inflow Depth = 5.69"	for 100-Year Storm Event event
Inflow =	46.21 cfs @ 12.08 hrs, Volume=	3.538 af
Outflow =	4.21 cfs @ 12.91 hrs, Volume=	3.217 af, Atten= 91%, Lag= 50.1 min
Primary =	2.44 cfs @ 12.91 hrs, Volume=	2.396 af
Secondary =	1.78 cfs @ 12.91 hrs, Volume=	0.820 af

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs Starting Elev= 48.00' Surf.Area= 15,657 sf Storage= 43,393 cf

Peak Elev= 53.29' @ 12.91 hrs Surf.Area= 20,632 sf Storage= 139,321 cf (95,928 cf above start)

Plug-Flow detention time= 1,458.9 min calculated for 2.220 af (63% of inflow)

Center-of-Mass det. time= 947.6 min (1,714.1 - 766.5)

#	Invert	Avail.Storage	Storage Description
1	45.00'	175,675 cf	Custom Stage Data (Prismatic)Listed below

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Elevation		Surf.Area		Cum.Store		
(feet)		(sq-ft)	(cubic-feet)	(cubic-feet)		
45.00		12,977	0	0		
47.00		14,759	27,736	27,736		
49.00		16,555	31,314	59,050		
į	51.00	18,569		94,174		
	53.00	20,363		133,106		
	55.00	22,206	•	175,675		
		,	,	,		
#	Routing	Invert	Outlet Devices			
1	Device 3	48.00'	3.0" Vert. Orifice/	<b>Grate</b> C= 0.600		
2	Device 3	52.60'	1.0' long Broad-Crested Rectangular Weir			
			Head (feet) 1.00			
			Coef. (English) 3.30 3.30			
3	Primary	45.00'	24.0" x 100.0' long Culvert CMP, projecting, no headwall, Ke= 0.900			
	,		Outlet Invert= 44.00' S= 0.0100 '/' n= 0.012 Cc= 0.900			
4	Device 3	54.00'	<b>36.0" Horiz. Orifice/Grate</b> Limited to weir flow C= 0.600			
5	Secondary	50.95'				
6	Secondary					
7	Secondary					
8	Secondary		4.0" Vert. Orifice/Grate C= 0.600			
The second state of the se						
Primary OutFlow Max=2.44 cfs @ 12.91 hrs HW=53.29' (Free Discharge)						
3=Culvert (Passes 2.44 cfs of 32.25 cfs potential flow)						
1=Orifice/Grate (Orifice Controls 0.54 cfs @ 10.9 fps)						
⊢	2=Broad-Crested Rectangular Weir (Weir Controls 1.90 cfs @ 2.7 fps)					
L	4=Orifice/Grate ( Controls 0 00 cfs)					

**4=Orifice/Grate** (Controls 0.00 cfs)

**Secondary OutFlow** Max=1.78 cfs @ 12.91 hrs HW=53.29' (Free Discharge)

-5=Orifice/Grate (Orifice Controls 0.16 cfs @ 7.2 fps)

**—6=Orifice/Grate** (Orifice Controls 0.84 cfs @ 4.3 fps)

-7=Orifice/Grate (Orifice Controls 0.63 cfs @ 3.2 fps)

-8=Orifice/Grate (Orifice Controls 0.15 cfs @ 1.8 fps)

#### Pond 4P: Western Wetland

Inflow Area = 9.739 ac, Inflow Depth = 2.02" for 100-Year Storm Event event

Inflow = 4.57 cfs @ 12.15 hrs, Volume= 1.643 af

Primary = 4.57 cfs @ 12.15 hrs, Volume= 1.643 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

## **Pond 5P: Northern Wetland**

Inflow Area = 8.105 ac, Inflow Depth = 3.72" for 100-Year Storm Event event

Inflow = 2.67 cfs @ 12.83 hrs, Volume= 2.514 af

Primary = 2.67 cfs @ 12.83 hrs, Volume= 2.514 af, Atten= 0%, Lag= 0.0 min

Type III 24-hr 100-Year Storm Event Rainfall=6.40"

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## Pond 6P: Vernal Pool

Inflow Area = 0.147 ac, Inflow Depth = 15.18" for 100-Year Storm Event event

Inflow = 0.31 cfs @ 12.15 hrs, Volume= 0.186 af

Primary = 0.31 cfs @ 12.15 hrs, Volume= 0.186 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 1.00-72.00 hrs, dt= 0.01 hrs

## Pond 7P: Eastern Wetland

Inflow = 1.78 cfs @ 12.91 hrs, Volume= 0.820 af

Primary = 1.78 cfs @ 12.91 hrs, Volume= 0.820 af, Atten= 0%, Lag= 0.0 min